

NOVEMBER/DECEMBER 2023

CBC52 — MOLECULAR BIOLOGY

Time : Three hours

Maximum : 75 marks



SECTION A — (10 × 2 = 20 marks)

Answer ALL questions.

1. Define replication.
2. Summarize about R strain.
3. Recall the processes in Central dogma.
4. Show the Inhibitors of transcription.
5. How many codons are present in genetic code?
6. Outline the role of A site in protein synthesis.
7. Name any two Operons.
8. Infer the role of repressor in gene expression.
9. Define mutation.
10. Interpret about the number of chromosomes in humans.

SECTION B — (5 × 5 = 25 marks)

Answer ALL questions.

11. (a) Explain Conjugation by making use of E. Coli.

Or

- (b) Categorize the different types of replication.

12. (a) Identify the enzyme involved in transcription in prokaryote. Write note on its structure and function.

Or

- (b) Analyse about mRNA splicing.

13. (a) How is Codon Dictionary organized? Explain.

Or

- (b) Examine the inhibitors of translation in prokaryotes.

14. (a) Identify the process of attenuation in Trp operon regulation.

Or

- (b) Simplify the process of gene amplification by PCR.

15. (a) Choose molecular mutation and explain.

Or

- (b) Examine the DNA repair mechanism followed to fix damage caused in DNA by thymine dimers.

SECTION C — (3 × 10 = 30 marks)

Answer any THREE questions.

16. Explain the replication in prokaryotes.

17. What is reverse transcription? Appraise its role in retrovirus replication.

18. Deduce the steps involved in protein synthesis in prokaryotes.

19. Discuss about the structural organization of lac operon and predict what will happen to the operon if there is no lactose?

20. Discuss about base excision repair.

